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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,264	02/12/2002	Rajendra R. Damle	M-9927 US	5023

33031 7590 06/28/2005

CAMPBELL STEPHENSON ASCOLESE, LLP
4807 SPICEWOOD SPRINGS RD.
BLDG. 4, SUITE 201
AUSTIN, TX 78759

EXAMINER	
PATEL, ASHOKKUMAR B	
ART UNIT	**PAPER NUMBER**
2154	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,264	DAMLE ET AL.	
	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-35 are subject to examination.

Response to Arguments

2. Applicant's arguments filed 05/02/ 2005 have been fully considered but they are not persuasive for the following reasons and teachings of the prior art.

Rejection of Claims under 35 U.S. C. § 102(b)

Applicant's argument:

"Applicants respectfully submit that Dugan provides no disclosure of an input datastream being decomposed into a plurality of substreams. Failing to provide such disclosure, Dugan cannot be said to anticipate these claims."

"The Dugan disclosure never demonstrates a subdivision of an actual high data rate data stream."

"Dugan shows a combining of a plurality of low data rate data streams, not decomposition of a single high data rate data stream."

"Dugan does not show the claimed method of taking a single input data stream and decomposing that input data stream into a plurality of sub-streams that are then transmitted over a plurality of channels."

"Dugan provides no disclosure of decomposing an input data stream into a plurality of sub-streams as claimed. Without such disclosure, Dugan cannot be said to anticipate these claims."

Examiner's response:

Dugan teaches at col. 2, line 65 through col. 3, line 3," According to one aspect of the present invention, there is provided a system that reduces the effects of chromatic and polarization mode dispersion in single-mode optical fibers by performing the steps of **splitting the high-speed data stream into four lower-rate streams at the transmit end** of the system or the equivalent functions thereof."

Dugan teaches at col. 3, line 3-5," The present invention sends each lower-rate stream via separate wavelength channels. Prior to transmission, the separate wavelength channels are multiplexed into one fiber."

Thus, Dugan does provide disclosure of decomposing an input data stream into a plurality of sub-streams as claimed and as such Dugan can be said to anticipate these claims.

Rejection of Claims under 35 U.S.C. § 103

Applicant's argument:

"As stated above, Applicants submit that Dugan does not disclose each limitation of the independent claims from which the above-referenced dependent claims depend. The Office Action presents no discussion that Shaunfield provides any disclosure of the missing limitations discussed above."

" Applicants respectfully submit that neither Dugan nor Shaunfield provide disclosure of the protocol processing being performed on an input datastream or an output data stream, or the corresponding protocol processors."

"Applicants further respectfully submit that the Office Action does not establish a motivation to combine the references in the references themselves or in the art."

"Applicants respectfully submit that in light of the amended claim limitation and the arguments presented above, neither Dugan nor Shaunfield provide disclosure of such compression and that therefore the claim, as amended, is allowable as written."

Examiner's response:

Please refer to the Examiner's response provided above for Dugan's teachings. In addition, Dugan teaches in Fig. 1, Optical transmitter and Fig. 2 being optical receiver. Therefore, depending upon Figs.1 and 2 are employed in handling the Dugan's data streams, the data stream defines itself as being input data stream or output datastream.

Shaunfield teaches in col. 2, lines 6-20, "The low cost compression coupled with new switching capabilities of SONET/SDH now allow a switch base distribution system for video signals."(performing compression on a one of said datastreams) Also, the reference teaches in col. 16, lines 38-50 "The optical bus controller 120 includes an optical/electrical interface 150, comprising a photo detector circuit 152 for converting the incoming optical signals on the downstream fiber 24a to corresponding serial electrical signals on line 156. The electrical signals on the serial data line 156 correspond identically to the optical signals on the serial downstream fiber 24a. The optical/electrical interface 150 also includes a laser driver and corresponding circuits 154 for converting the serial electrical signals on line 158 to corresponding optical signals on the output downstream fiber 14a. The interface 150 is of conventional design, where the laser driver 154 includes temperature, aging and other compensation circuits well known in the art." (performing protocol processing on said datastream ; and

performing protocol processing on said reconstructed datastream.) Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to employ the technique and the means of Shaunfield to the system of Dugan such that the datastream can be compressed and the electrical datastream be converted to optical datastream for transmission on optical fiber and optical reconstructed datastream be converted to electrical datastream. It would have been obvious for the reasons that are already taught by the reference along with the teachings.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 9-18, 20-28 and 30-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Dugan (US 5, 710, 650)

Referring to claim 1,

The reference teaches a method for transporting information over a network comprising:

decomposing an input datastream into a plurality of sub-streams (Fig. 1 Abstract," The circuitry includes circuitry for partitioning the high data rate data stream into a plurality of lower data rate data streams."); and

communicating said sub-streams between a first network element and a second

network element of said network by transporting each one of said sub-streams over one of a plurality of channels (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly."), wherein

a bandwidth of said input datastream is greater than a bandwidth of any one of said channels (Fig. 1 Abstract," The circuitry includes circuitry for partitioning the high data rate data stream into a plurality of lower data rate data streams.")

Referring to claims 2 and 14,

The reference teaches the method of claim 1, wherein each of said channels is an optical channel (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.").

Referring to claims 3 and 15,

The reference teaches the method of claim 2, wherein each of said optical channels corresponds to a wavelength (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal.

The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.").

Referring to claims 4 and 16,

The reference teaches the method of claim 1, wherein said each one of said sub-streams has a bandwidth that is equal to or less than a bandwidth of a corresponding one of said channels. (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.")

Referring to claim 5,

The reference teaches the method of claim 1, further comprising: assembling said sub-streams into a reconstructed output datastream. (col. 3, lines 13-16).

Referring to claims 6 and 17,

The reference teaches the method of claim 5, wherein said assembling comprises: placing a portion of each of said substreams in a queue, wherein said reconstructed output datastream is output by said queue.(Fig. 2, col. 6, lines 25-28).

Referring to claims 9, 10, 20 and 21,

The reference teaches the method of claim 1, wherein said network is an existing network, and the method of claim 1, wherein said network comprises an underlying network infrastructure, and the method is performed without alteration of said underlying network infrastructure. (Fig. 1 Abstract," A wavelength division multiplexing circuit

multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.").

Referring to claims 11 and 22

The reference teaches the method of claim 10, wherein said network comprises a fiber-optic system. (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.").

Referring to claims 12 and 23,

The reference teaches the method of claim 1, wherein said decomposition comprises: placing a portion of said input datastream in one of a plurality of queues, wherein each of said queues corresponds to a one of said channels. (Fig. 2).

Referring to claim 13,

The reference teaches a method for receiving information transported over a network comprising:

receiving a plurality of sub-streams (Fig. 2), wherein

said sub-streams are created by decomposing an input datastream into said sub-streams (Fig. 1 Abstract," The circuitry includes circuitry for partitioning the high data rate data stream into a plurality of lower data rate data streams."),

each of said sub-streams is transported over said network on a corresponding one of a plurality of channels (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly."), and

a bandwidth of said input datastream is greater than a bandwidth of any one of said channels (Fig. 1 Abstract," The circuitry includes circuitry for partitioning the high data rate data stream into a plurality of lower data rate data streams.") (Fig. 1 Abstract," The circuitry includes circuitry for partitioning the high data rate data stream into a plurality of lower data rate data streams."); and assembling said sub-streams into a reconstructed output datastream. (col. 3, lines 13-16).

Referring to claim 18,

The reference teaches the method of claim 13, further comprising: decomposing said input datastream into said sub-streams; and transporting said each of said sub-streams over said network on said corresponding one of a plurality of channels. (Fig. 1 Abstract," The circuitry includes circuitry for partitioning the high data rate data stream into a plurality of lower data rate data streams.", and ," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.")

Referring to claim 24,

The reference teaches an apparatus for transporting information over a network comprising: a first sub-stream management device, comprising

an input configured to receive an input datastream (Fig. 1), and

a plurality of outputs, wherein

each of said outputs is configured to output one of a plurality of

sub-streams (Fig.1, Abstract), wherein the input datastream is decomposed to form the plurality of sub-streams,

each of said sub-streams is transported over said network on a

corresponding one of a plurality of channels (Abstract), and

a bandwidth of said input datastream is greater than a bandwidth of

any one of said channels (Abstract).

Referring to claims 25 and 31,

The reference teaches the apparatus of claim 24, wherein each of said channels is an optical channel. (Abstract)

Referring to claims 26 and 32,

The reference teaches the apparatus of claim 25, wherein each of said optical channels corresponds to a wavelength. (Abstract)

Referring to claims 27 and 33,

The apparatus of claim 24, wherein said each one of said sub-streams has a bandwidth that is equal to or less than a bandwidth of said corresponding one of said channels. (Abstract)

Referring to claim 28,

The reference teaches the apparatus of claim 24, further comprising a second sub-stream management device, comprising

an output configured to output a reconstructed output datastream (Fig.2), and a plurality of inputs, wherein each of said inputs is configured to receive one of said sub-streams (Fig. 2, Abstract); and

an underlying network infrastructure, communicatively coupled to said first and said second sub-stream management devices, and comprising said channels. (Fig. 1 Abstract," A wavelength division multiplexing circuit multiplexes each of the lower data rate data streams on the plurality of separate wavelength channels into a single optical fiber assembly to form a multiplexed signal. The wavelength division multiplexing circuit further transmits the multiplexed lower data rate signal along the single optical fiber assembly.").

Referring to claim 30,

An apparatus for transporting information over a network comprising: a first sub-stream management device, comprising

an output configured to output a reconstructed output datastream (Fig. 2, Abstract), and

a plurality of inputs, wherein

each of said inputs is configured to receive one of a plurality of sub-streams,

said sub-streams are created by decomposing an input datastream into said sub-streams, each of said sub-streams is transported over said network on a

corresponding one of a plurality of channels, and a bandwidth of said input datastream is greater than a bandwidth of any one of said channels. (Fig. 1, 2, Abstract, col. 3, lines 13-16).)

Referring to claim 34,

The reference teaches the apparatus of claim 30, further comprising

a second sub-stream management device, comprising

an input configured to receive said input datastream, and

a plurality of outputs, wherein

each of said outputs is configured to output one of said sub-streams; and

an underlying network infrastructure, communicatively coupled to said first and said second sub-stream management devices, and comprising said channels. (Fig. 1,2 and Abstract).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 7, 8, 19, 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dugan (US 5, 710, 650) in view of Shaunfield (US 5, 867, 484)

Referring to claims 7, 8 and 19,

Keeping in mind the teachings of the reference Dugan as stated above, the reference Dugan fails to explicitly teach performing compression on a one of said sub-streams and performing protocol processing on said input datastream ; and performing protocol processing on said reconstructed output datastream.

The reference Shaunfield teaches in col. 2, lines 6-20, "The low cost compression coupled with new switching capabilities of SONET/SDH now allow a switch base distribution system for video signals."(performing compression on a one of said datastreams) Also, the reference teaches in col. 16, lines 38-50 "The optical bus controller 120 includes an optical/electrical interface 150, comprising a photo detector circuit 152 for converting the incoming optical signals on the downstream fiber 24a to corresponding serial electrical signals on line 156. The electrical signals on the serial data line 156 correspond identically to the optical signals on the serial downstream fiber 24a. The optical/electrical interface 150 also includes a laser driver and corresponding circuits 154 for converting the serial electrical signals on line 158 to corresponding optical signals on the output downstream fiber 14a. The interface 150 is of conventional design, where the laser driver 154 includes temperature, aging and other compensation circuits well known in the art." (performing protocol processing on said datastream ; and performing protocol processing on said reconstructed datastream.)

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to employ the technique and the means of Shaunfield to the system of Dugan such that the datastream can be compressed and the electrical datastream be converted to optical datastream for transmission on optical fiber and

optical reconstructed datastream be converted to electrical datastream. It would have been obvious for the reasons that are already taught by the reference along with the teachings.

Referring to claims 29 and 35,

Keeping in mind the teachings of the reference Dugan as stated above, the reference Dugan fails to explicitly teach a first protocol processor, coupled to said input; and a second protocol processor, coupled to said output.

The reference Shaunfield teaches in col. 16, lines 38-50 "The optical bus controller 120 includes an optical/electrical interface 150, comprising a photo detector circuit 152 for converting the incoming optical signals on the downstream fiber 24a to corresponding serial electrical signals on line 156. The electrical signals on the serial data line 156 correspond identically to the optical signals on the serial downstream fiber 24a. The optical/electrical interface 150 also includes a laser driver and corresponding circuits 154 for converting the serial electrical signals on line 158 to corresponding optical signals on the output downstream fiber 14a. The interface 150 is of conventional design, where the laser driver 154 includes temperature, aging and other compensation circuits well known in the art." (performing protocol processing on said datastream ; and performing protocol processing on said reconstructed datastream.)

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to employ the technique and the means of Shaunfield to the system of Dugan such that the datastream can be compressed and the electrical datastream be converted to optical datastream for transmission on optical fiber and

optical reconstructed datastream be converted to electrical datastream. It would have been obvious for the reasons that are already taught by the reference along with the teachings.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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